DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB56

Endangered and Threatened Wildlife and Plants; Proposal to List the Duskytail Darter, Palezone Shiner, and Pygmy Madtom as Endangered Species

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service proposes to list three fishes—the duskytail darter (*Etheostoma* (*Catonotus*) sp.), palezone shiner (*Notropis* sp., cf. *procne*), and pygmy madtom (*Noturus stanauli*)—as endangered species under the Endangered Species Act (Act) of 1973, as amended. The duskytail darter is presently known to inhabit only five short stream reaches: the Little River, Blount County, Tennessee; Citico Creek, Monroe County, Tennessee; Big South Fork Cumberland River, Scott County, Tennessee; and Copper Creek and

Clinch River, Scott County, Virginia. Two other historic duskytail darter populations are extirpated. The palezone shiner is presently known from only two stream reaches: the Paint Rock River, Jackson County, Alabama, and the Little South Fork Cumberland River, Wayne and McCreary Counties, Kentucky. Two other historic palezone shiner populations are extirpated. The pygmy madtom has been collected from only two short stream reaches: The Duck River, Humphreys County, Tennessee, and the Clinch River, Hancock County, Tennessee. The madtom may no longer exist in the Duck River. All three fishes presently coexist with other federally listed species in all stream reaches, except the Duck River. All these fishes and their habitat are impacted by deteriorated water quality primarily resulting from poor land use practices. The limited distribution of these fishes also makes them very vulnerable to toxic chemical spills. Comments and information are sought from the public on this proposal.

DATES: Comments from all interested parties must be received by September 8, 1992. Public hearing requests must be received August 24, 1992.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, U.S. Fish and Wildlife Service, Asheville Field Office, 330 Ridgefield Court, Asheville, North Carolina 28806 (704/665-1195). Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. Richard G. Biggins at the above address.

SUPPLEMENTARY INFORMATION:

Background

The duskytail darter (*Etheostoma* (*Catonotus*) sp.) is being scientifically described by Robert Jenkins (Roanoke College, personal communication, 1990). This small (2-inch) fish, which coexists with other federally listed species in all stream reaches it inhabits, is straw to olivaceous in color. It inhabits rocky areas in gently flowing, shallow pools and eddy areas of large creeks and moderately large rivers in the Tennessee and Cumberland River systems (Starnes and Etnier 1980; Burkhead and Jenkins, in press; Layman, in press; and Clyde Voigtlander, Tennessee Valley Authority, *in litt.*, 1991). Historically, the duskytail was likely more widespread. However it presently has a very fragmented distribution (Etnier and Starnes, in press; Jenkins and Burkhead, in press). The Tennessee Wildlife Resources Agency and the Tennessee Heritage Program of the Tennessee Department of Conservation recognize this fish as a threatened species (Starnes and Etnier 1980). Effective January 1, 1992, the species was listed by the Department of Game and Inland Fisheries as endangered in Virginia (Karen Terwilliger, Virginia Department of Game and Inland Fisheries, *in litt.*, 1991).

Although the fish fauna of the Tennessee and Cumberland River systems has been extensively surveyed, the duskytail has been collected from only seven short river reaches: Little River, Blount County, Tennessee; Citico Creek, Monroe County, Tennessee; Big South Fork Cumberland River, Scott County, Tennessee; Abrams Creek, Blount County, Tennessee; South Fork Holston River, Sullivan County, Tennessee; and Copper Creek and Clinch River, Scott County, Virginia. The duskytail is apparently extirpated from Abrams Creek and South Fork Holston River as it has not been found in either area in recent years (Jenkins and Burkhead, in press).

The Little River population inhabits about 9 river miles (Layman, in press). Layman (in press) stated that the duskytail in the lower reaches of the Little River was undoubtedly lost when the area was impounded. This population is potentially threatened by water withdrawal and increasing residential and commercial development in the watershed (Clyde Voigtlander, *in litt.*, 1991).

The duskytail exists downstream of U.S. Forest Service lands in about 0.5 river miles of Citico Creek (Peggy Shute, Tennessee Valley Authority, personal communication, 1991). Although the majority of the Citico Creek watershed is controlled by the Forest Service, much of the populated reach is privately owned, and stream-side habitat destruction has been observed in the area (Clyde Voigtlander, *in litt.*, 1991).

The duskytail inhabits about 17 river miles of Copper Creek. Although the duskytail is characterized as generally rare or uncommon in Copper Creek (Burkhead and Jenkins, in press), this creek probably supports the largest population of the fish (Clyde Voigtlander, *in litt.*, 1991). According to the Virginia Department of Game and Inland Fisheries (Bud Bristow, *in litt.* 1991), this population is threatened by siltation, riparian erosion, and agriculturai pollution.

One duskytail specimen was collected from the Clinch River in 1980, about 1 river mile below the mouth of Copper Creek (Burkhead and Jenkins, in press). This area has been well sampled since 1980, but no additional specimens have been encountered. This one fish may represent periodic downstream movement from Copper Creek, and no viable duskytail population may exist in the Clinch River.

Duskytail darters have only been taken from one site on the Big South Fork of the Cumberland River. Although other collections have been made in the Big South Fork, no other populations have been found (Jack Collier, National Park Service, personal communication, 1990; and Melvin Warren, Southern Illinois University, personal communication, 1990). This population, although within the Big South Fork National Recreational Area (BSFRA), is potentially threatened by runoff from coal mines in the upper watershed above the BSFRA (Jack Collier, personal communication, 1990).

The duskytail darter populations are threatened by the general deterioration of water quality resulting from siltation and other pollutants from poor land use practices, coal mining, and waste discharges. Etnier and Starnes (in press) stated that this darter"

* * * and other darters dependent upon slit free, rocky pools in large streams and rivers, such as the ashy darter, have apparently suffered more from the effects of siltation than have darters typical of swift riffles."

On November 27, 1990, the Service notified by mail (50 letters) Federal and State agencies within the species' historic range, local governments within the species' present range, and interested individuals that a status review of the duskytail darter was being conducted. Seven comments were received as a result of this notification. No objections to the potential listing of the duskytail darter were received, and much information on the species' status and distribution was provided and incorporated into this proposed rule. The species was upgraded to a Category 1 status as a result of this information.

The palezone shiner (*Notropis* sp., cf. *Procne*) is being scientifically described by Melvin Warren (personal communication, 1990). This small (2-inch), slender fish, which coexists with other federally listed species in all stream reaches it inhabitats, has a translucent and straw-colored body with a dark mid-lateral stripe. It occurs in large creeks and small rivers in the Tennessee and Cumberland River systems and inhabits flowing pools and runs with sand, gravel, and bedrock substrates (Warren and Burr 1990).

This fish is listed by the Kentucky State Nature Preserves Commission

(Warren et al. 1986) as an endangered species. In Alabama, the species is considered threatened (Pierson 1990). Although the species is believed to be extirpated from Tennessee, the Tennessee Wildlife Resources Agency and the Tennessee Heritage Program of the Tennessee Department of Conservation recognize this fish as a species in need of management (Starnes and Etnier 1980).

Although numerous and extensive fish collections have been made in the Tennessee and Cumberland River systems, the palezone shiner has been taken from only four rivers: The Paint Rock River, Jackson County, Alabama; the Little South Fork Cumberland River, Wayne and McCreary Counties, Kentucky; Marrowbone Creek, Cumberland County, Kentucky; and Cove Creek, Clinch River drainage, Campbell County, Tennessee (Starnes and Etnier 1980; Warren and Burr 1990; and Richard Hannan, Kentucky State Nature Preserves Commission, *in litt.*, 1990). Based on the results of a recent status survey (Warren and Burr 1990), only two palezone populations remain. No palezone shiners were found in either Marrowbone or Cove Creek. However, the fish still exists in about 3 river miles of the Paint Rock River and in about 30 river miles of the Little South Fork Cumberland River.

The palezones shiner's distribution has apparently been reduced by such factors as impoundments and the general deterioration of water quality from siltation and other pollutants contributed by coal mining, poor land use practices, and waste discharges. Richard Hannan (*in litt.*, 1990) stated that the palezone possibly inhabited the main stem of the Cumberland River in Kentucky prior to impoundment. Warren and Burr (1990) reported that diversity and density of the benthic fish community in the Little South Fork of the Cumberland River has been severely reduced. Anderson (1989) found that nearly all freshwater mussels in the lower third of the South Fork were eliminated in the 1980s and attributed the loss to toxic runoff from surface coal mines. Warren and Burr (1990) stated, "The limited distribution of the species in the Paint Rock River definitely appears correlated with increasing agriculture and associated increase in stream siltation * * *".

In the **Federal Register** (54 FR 554) of January 6, 1989, the Service announced that the palezone shiner was a category 2 species. (A category 2 species is one that is being considered for possible addition to the Federal List of Endangered and Threatened Wildlife and Plants.) On October 30, 1990, the Service notified by mail (63 letters) Federal and State agencies within the species' historic range, local governments within the species' present range, and interested individuals that a status review of the palezone shiner was being conducted. Eleven comments were received as a result of this notification. No objections to the potential listing of the palezone shiner were received, and much information on the species' status and distribution was provided and incorporated into this proposed rule. As a result of the information gathered, the species was upgraded to a Category 1 status.

The pygmy madtom (*Noturus stanauli*) was described by Etnier and Jenkins (1980). This species, which is known from two populations separated by about 600 river miles, was once likely more widespread (O'Bara 1991). However, like some other catfish in the genus *Noturus*, the pygmy madtom is presently rare and has a fragmented distribution (Etnier and Jenkins 1980). The pygmy madtom is the smallest (maximum length 1.5 inches) of the known madtoms (Etnier and Jenkins 1980). It has a very distinctive pigmentation pattern—very dark above the body midline and light below. The species is found in moderate to large rivers on shallow, pea-size gravel shoals with moderate to strong current. The Tennessee Wildlife Resources Agency and the Tennessee Heritage Program of the Tennessee Department of Conservation recognize this fish as a threatened species (Starnes and Etnier 1980).

The fish fauna of the Tennessee River Valley has been extensively surveyed (O'Bara 1991); however, the pygmy madtom has only been collected from two short river reaches. It has been taken from the Duck River, Humphreys County, Tennessee, and from the Clinch River, Hancock County, Tennessee. Based on the results of recent surveys (O'Bara 1991), the fish still exists in the Clinch River, and it is possibly extirpated from the Duck River. Five specimens were taken at one of the two known historic sites in the Clinch River by O'Bara (1991) in the fall of 1990. O'Bara (1991) did not find the species in the Duck River during his 1990 survey, and he reported that the species had not been taken from the Duck River since 1974.

Etnier and Jenkins (1980), in their description of this species, report that it has been taken in only about one-half of the collections made at the Clinch River sites and only about one-fourth of the collections at the Duck River site. Thus, although the species has not been taken in recent years in the Duck River, it may still survive there.

The pygmy madtom, which coexists with other federally listed species in the Clinch River, is threatened by the general deterioration of water quality from siltation and other pollutants associated with poor land use practices and waste discharges. The section of the Duck where the species has been taken is being seriously threatened by streambank erosion. The aquatic resources of the Clinch River are potentially threatened by increased urbanization, coal mining, and poorly managed agricultural practices. Because the pygmy madtom may exist in only one short river reach, this population could easily be lost from a single toxic chemical spill.

The pygmy madtom was recognized by the Service in the January 6, 1989, **Federal Register** (54 FR 554) as a category 2 species. (A category 2 species is one that is being considered for possible addition to the Federal List of Endangered and Threatened Wildlife and Plants.) On October 30, 1990, the Service notified by mail (25 letters) Federal and State agencies within the species' historic range, local governments within the species' present range, and interested individuals that a status review of the pygmy madtom was being conducted. Five comments were received as a result of this notification. No objections to the potential listing of the pygmy madtom were received, and much information on the species' status and distribution was provided and incorporated into this proposed rule. The status of the species was upgraded to a Category 1, as a result of the information gathered.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the duskytail darter (*Etheostoma* (*Catonotus*) sp.), palezone shiner (*Notropis* sp., cf. *procne*), and the pygmy madtom (*Noturus stanauli*) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The Tennessee and Cumberland Rivers previously

supported one of the world's richest assemblages of temperate freshwater river fishes (Starnes and Etnier 1986), but these rivers are now two of our most severely altered river systems. Most of the main stem of both rivers and many of the tributaries are impounded (over 2,300 river miles, or about 20 percent, of the Tennessee River and its tributaries with drainage areas of 25 square miles or greater are impounded (Tennessee Valley Authority 1971)). In addition to the loss of riverine habitat within the impoundment, most impoundments also seriously alter downstream aquatic habitat. Coal mining related siltation and associated toxic runoff have adversely impacted many stream reaches. Numerous streams have experienced fish kills from toxic chemical spills, and poor land use practices have fouled many waters with silt. The runoff from large urban areas has degraded water and substrate quality. Because of the extent of habitat destruction, the aquatic faunal diversity in many of the basins' rivers has declined significantly. Many species that once existed throughout major portions of these basins now exist only as isolated remnant populations (Neves and Angermeier 1990). Because of this destruction of riverine habitat, 8 fishes and 24 mussels in the Tennessee and Cumberland River basins have already required Endangered Species Act protection, and numerous other aquatic species in these two basins are currently considered candidates for Federal listing.

The fish fauna of the Tennessee and Cumberland River systems have been extensively surveyed (Ronald Cicerello, Kentucky State Nature Preserves Commission; David Etnier, University of Tennessee; Robert Jenkins, Roanoke College; Christopher O'Bara, Tennessee Technological University; Charles Saylor, Tennessee Valley Authority; Melvin Warren and Brooks Burr, Southern Illinois University; personal communications, 1990). Yet, only a few isolated populations of the duskytail darter, palezone shiner, and pygmy madtom remain (see "Background" section for a discussion of the current and historic distribution of and threats to the remaining populations). These fishes have been and are presently adversely impacted by the factors described above. Unless steps are taken to protect these fishes, the number and size of their populations are expected to decline.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* The specific areas inhabited by these fishes are presently unknown to the general public. As a result, their overutilization has not been a problem. However, there is the potential for vandalism to become a problem, especially if the specific inhabited reaches are revealed during the sometimes controversial listing process. Although scientific collecting is not presently identified as a threat, these fishes exist in small isolated populations. If these populations continue to decline, take by private and institutional collectors could pose a threat. Federal protection could help to minimize illegal or inappropriate take.

C. *Disease or predation.* Although these fishes are undoubtedly consumed by predators, there is no evidence that predation is a threat to them.

D. *The inadequacy of existing regulatory mechanisms.* States within these species' ranges prohibit the taking of fishes and wildlife for scientific purposes without a State collecting permit. However, the species are generally not protected from other threats. Federal listing will provide additional protection for the species under the Endangered Species Act by requiring Federal permits to take the species and by requiring Federal agencies to consult with the Service when projects they fund, authorize, or carry out may adversely affect the species.

E. *Other natural or manmade factors affecting its continued existence.* Because the existing duskytail darter, palezone shiner, and pygmy madtom populations inhabit only short river reaches, they are vulnerable to extirpation from accidental toxic chemical spills. As the populated stream reaches of all three fish species are isolated from each other by impoundments, recolonization of any extirpated population would not be possible without human intervention. Absence of natural gene flow among populations of these fishes is also a threat, making the long-term genetic viability of these isolated populations questionable.

Additionally, several madtom species have, for still unexplained reasons, been extirpated from portions of their range. Etnier and Jenkins (1980) speculated that this may "* * * in addition to visible habitat degradation, be related to their being unable to cope with olfactory 'noise' being added to riverine ecosystems in the form of a wide variety of complex organic chemicals that may occur only in trace amounts." If madtoms are adversely impacted by increased concentrations of complex organic chemicals, increase in these materials could be a problem for the pygmy madtom.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these three fishes in determining to propose these rules. Based on this evaluation, the preferred action is to propose the duskytail darter (*Etheostoma*) (*Catonotus* sp.), palezone shiner (*Notropis* sp., cf. *procne*, and pygmy madtom (*Noturus stanauli*) as endangered. Presently, the dusktail darter inhabits only five short stream reaches, the palezone shiner is known from only two stream reaches, and the pygmy madtom possibly occurs in only one short stream reach. All three fishes and their habitat have been and continue to be impacted by water quality deterioration resulting from poor land use practices and by water pollution. The limited distribution of these fishes also makes them vulnerable to toxic chemical spills. Because of the restricted nature of these populations and their vulnerability, endangered status appears to be the most appropriate classification for the species. (See "Critical Habitat" section for a discussion of why critical habitat is not being proposed for these fishes.)

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. Section 7(a)(2) of the Act and regulations codified at 50 CFR, part 402 require Federal agencies to insure, in consultation with and with the assistance of the Service, that activities they authorize, fund or conduct are not likely to jeopardize the continued existence of a listed species or result in the destruction or the adverse modification of critical habitat, if designated. The Service's regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of such threat to the species; or, (2) such designation of critical habitat would not be beneficial to the species. The Service finds that designation of critical habitat is not presently prudent for these species. Such a determination would result in no known benefit to these three species.

As part of the development of these proposed rules, Federal and State

agencies were notified of these fishes' distribution, and they were requested to provide data on proposed Federal actions that might adversely affect the species. No specific projects were identified. Should any future projects be proposed in regions inhabited by these fishes, the involved Federal agency will already have the distributional data needed to determine if the species may be impacted by their action. Each of these species occupies a very limited range, and any adverse modification of these river stretches would be likely to jeopardize the continued existence of the species. Therefore, habitat protection for these species will be best accomplished through the section 7 jeopardy standard and the section 9 prohibition against take. Thus, no additional benefits would accrue from critical habitat designation that would not also accrue from the listing of these species.

In addition, these species are rare, and taking for scientific purposes and private collection could be a threat. The publication of critical habitat maps in the **Federal Register** and local newspapers, and other publicity accompanying critical habitat designation could increase the collection threat and increase the potential for vandalism during the critical habitat designation process. The locations of populations of these species have consequently been described only in general terms in these proposed rules. Any existing precise locality data would be available to appropriate Federal, State, and local governmental agencies from the Service office described in the "ADDRESSES" section.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required by Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

The Service notified Federal agencies that may have programs affecting these species. No specific proposed Federal actions were identified that would likely affect any of these species. Federal activities that could occur and impact the species include, but are not limited to, the carrying out or the issuance of permits for hydroelectric facility construction and operation, coal mining, reservoir construction, steam alterations, wastewater facility development, pesticide registration, and road and bridge construction. It has been the experience of the Service, however, that nearly all section 7 consultations can be resolved so that the species is protected and the project objectives are met.

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been take illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. In some instances, permits may be issued for a specified time to relieve undue economic hardship that would be suffered if such relief were not available. These species are not in trade, and economic hardship permit requests are not expected.

Public Comments Solicited

The Service intends that any final action resulting from these proposals will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning these proposed rules are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to these species;

(2) The location of any additional populations of these species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of these species; and

(4) Current or planned activities in the subject areas and their possible impacts on these species.

Final promulgation of the regulations on these species will take into consideration the comments and any additional information received by the Service, and such communications may lead to final regulations that differ from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to (see "Addresses" section of these rules).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

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Author

The primary author of this proposed rule is Richard G. Biggins, U.S. Fish and Wildlife Service, Asheville Field Office, 330 Ridgefield Court, Asheville, North Carolina 28806 (704/665–2782).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Proposed Regulations Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. It is proposed to amend § 17.11(h) by adding the following, in alphabetical order under FISHES, to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*		*	*	
Fishes:							
*	*	*	*		*	*	
Darter, duskytail	*Etheostoma (Catonotus)* sp.	U.S.A. (TN and VA)	Entire	E		NA	NA
*	*	*	*		*	*	
Madtom, pygmy	*Noturus stanauli*	U.S.A. (TN)	Entire	E		NA	NA
*	*	*	*		*	*	
Shiner, palezone	*Notropis* sp.	U.S.A. (AL, KY, and TN)	Entire	E		NA	NA
*	*	*	*		*	*	

Dated: June 22, 1992.

Richard N. Smith,

Director, Fish and Wildlife Service.

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